

I CLAIM:

1. A rotary drill bit for boring through a solid body, the rotary drill bit comprising:
a hollow drill shaft having a penetrating member attached to a first end; and
a sleeve positioned around a portion of the drill shaft defining a duct wherein a fluid pressure can be delivered to the drill site through the duct between the sleeve and drill shaft.
2. The rotary drill bit of claim 1, wherein the penetrating member has a cutting edge including a pilot drill.
3. The rotary drill bit of claim 2, further comprising a collar having a proximal end and a distal end for connecting the penetrating member to the drill shaft.
4. The rotary drill bit of claim 3, wherein the collar has an inner surface and an outer surface, the inner surface having a first threaded segment and defining a chamber, and the penetrating member has a second threaded segment located at the connecting end for engaging the first threaded segment of the collar wherein the connecting end is threadably attached to the collar.
5. The rotary drill bit of claim 4, wherein the second threaded segment comprises opposing first and second threaded, arcuate walls separated by first and second substantially planar walls.
6. The rotary drill bit of claim 5, wherein a length of the first and second threaded, arcuate walls is less than a length of the first and second substantially planar walls wherein a pair of air gaps are formed between the inner surface of the collar and the substantially planar walls.

7. The rotary drill bit of claim 1, wherein the shaft includes a passage for accepting the fluid pressure.
8. The rotary drill bit of claim 7, wherein the passage has an inlet for accepting the fluid pressure and an outlet for delivering the fluid pressure to the drill site.
9. The rotary drill bit of claim 8, wherein the outlet is located within a portion of the drill shaft covered by the sleeve.

10. A rotary drill bit for boring a hole through a solid body, the rotary drill bit comprising:

a drill bit;

a hollow drill shaft having a proximal end, an intermediate section, and a distal end, the proximal end including a port for accepting a fluid pressure from an external source, and the distal end including a vent for delivering the fluid pressure to a drill site; and

a sleeve surrounding the intermediate section and at least a portion of the distal and at least a portion of the proximal end wherein a disparity in diameters of the sleeve and the drill shaft allow the fluid pressure to travel in through the port, down the intermediate section, and exit the vent at the distal end.

11. A drill bit shaft comprising:

a hollow elongated member having a first end and an opposing second end attachable to a drill bit, the elongated member comprising a passage, the passage including an inlet located at the first end for accepting a fluid pressure into the passage and an outlet located between the first and second ends of the elongated member through which the fluid pressure exits the passage; and

a sleeve positioned around a portion of the elongated member including the passage outlet, a portion of the sleeve being spaced from the elongated member to provide a duct between the sleeve and the elongated member wherein the fluid pressure exiting the outlet is delivered toward the second end of the elongated member through the duct.

12. The drill bit shaft of claim 11, wherein the sleeve includes a fixed end adjacent the first end of the elongated member and attached thereto, and a free end adjacent the second end of the elongated member wherein the fluid pressure exits the duct through the free end.

13. A drill bit shaft comprising:

a hollow elongated member comprising a proximal end, an intermediate section, and a distal end, the proximal end including a port for accepting a fluid pressure from an external source, and the distal end including a vent for delivering the fluid pressure to a drill site; and

a sleeve surrounding a portion of the elongated member including the intermediate section and at least a portion of the distal and at least a portion of the proximal end, the sleeve spaced a distance from the elongated member for providing a fluid communication duct between the port and the vent wherein the fluid pressure can travel through the port, down the duct along the intermediate section, and exit the vent at the distal end.

14. A drill rod for use with drilling apparatus having a compressed air system for blowing compressed air through such drill rod to purge drilling debris from a hole being drilled, said drill rod comprising an elongated hollow steel bar having at least one side wall and a first end threaded to permit attachment thereof to said drilling apparatus, and a second end threaded to receive a drill bit, a tubular sleeve axially disposed around said steel bar to form a chamber between said steel bar and said tubular sleeve, the length of said tubular steel being insufficient to overlay the first and second threaded ends of said steel bar, a first end of said tubular sleeve adjacent to said first end of said steel bar being joined to said steel bar to seal a first end of said chamber, and an aperture through said at least one side wall under said tubular sleeve and adjacent to said sealed end of said annular chamber, said aperture communicating between said first end of said steel bar and said chamber, such the compressed air applied at said first end of said steel bar will pass therefrom and exit through said chamber adjacent to said threaded second end of said steel bar.

15. The drill rod of claim 14, wherein said steel bar and said tubular sleeve are cylindrical and the chamber formed therebetween is an annular chamber.

16. The drill rod of claim 14, wherein said aperture is formed by an axial hole in said first end of said steel rod in communication with a substantially radial hole through said at least one side wall of said steel rod.

17. A method of making a drill rod for use with drilling apparatus having a compressed air system for blowing compressed air through such drill rod to purge drilling debris from a hole being drilled, said method comprising the steps of:

- a. threading a first end of an elongated hollow steel bar to permit attachment thereof to said drilling apparatus;
- b. threading a second end of said steel bar to permit attachment of a drill bit;
- c. providing an aperture through said steel bar communicating between a side surface of said steel bar and said first end of said steel bar;
- d. placing a tubular sleeve axially around an outer surface of said steel bar to form an annular chamber between said steel bar and said tubular sleeve, the length of said tubular sleeve being insufficient to overlay the first and second threaded ends of said steel bar; and
- e. joining a first end of said tubular sleeve adjacent to said first end of said steel bar to seal a first end of said annular chamber.

18. The method of making a low cost drill rod of claim 17, wherein said aperture is formed by drilling an axial hole into said first end of said steel bar which intersects with a radial hole drilled into a side of said steel bar.